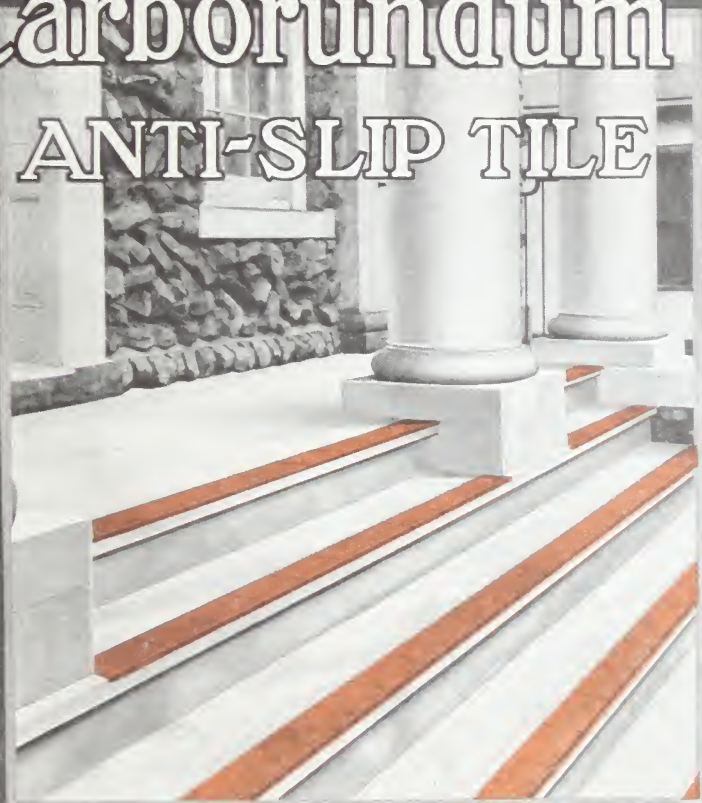


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# Carborundum

## ANTI-SLIP TILE



MANUFACTURED BY  
THE CARBORUNDUM COMPANY  
NIAGARA FALLS, N.Y. U.S.A.



# CARBORUNDUM

## ANTI-SLIP TILE

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Safe, Non-Wearing. For stair treads,  
elevator landings, ramps,  
swimming pools *and*  
general floor  
surfaces.

Manufactured by  
THE CARBORUNDUM COMPANY  
NIAGARA FALLS, N. Y., U. S. A.

Sales Representatives for  
United States and Canada:  
AMERICAN ABRASIVE METALS CO.  
NEW YORK, N. Y., U. S. A.

## Carborundum Anti-Slip Tile

**R**EALIZING the value of providing safe, non-slip surfaces for the protection of the working and walking public, The Carborundum Company has perfected the Carborundum Anti-Slip Tile—a tile that gives a safe footing under all conditions—a tile that is practically non-wearing—a tile that cannot wear smooth.

Natural stone, concrete or iron stair treads, ramps, elevator landings, and other surfaces subjected to heavy foot traffic, when installed, are generally tooled, roughened or corrugated with a view of making them safe under foot, but this protection is not permanent. They all become slippery and uneven in time under the wear and tear of traffic and present a distinct menace to the pedestrian.

In their efforts to correct prevailing unsafe conditions, architects and engineers, corporations and property owners will recognize the value of Carborundum Anti-Slip Tile. It presents a constant protection—an absolutely slip-proof surface that even after years of service will remain foot-safe. Carborundum Anti-Slip cannot wear smooth.

This tile is made of one of the modern artificial abrasives—a product of the electric furnace. For years this abrasive has been recognized as among the most valued grinding materials and is extensively used in the grinding of steels and other metal products. It is produced by the fusing of crude materials and is taken from the furnaces in the form of a molten mass. This mass is allowed to cool and crystallize, and is then broken and crushed to standard sizes of grains or crystals. These grains or crystals are mixed with clays or other ceramic materials and moulded into the various sizes and shapes of tile. The tile is then vitrified in high temperature kilns.



The Carborundum Anti-Slip Tile presents the same, free, clean, sharp surface of the grinding wheel—a gripping, abrading, safe, surface that will not—cannot wear smooth. The tile is the same throughout—that is, it is of the same structure and texture and of the same grade or degree of hardness. The processes involved in making this tile are the result of years of experience and careful scientific development of the making of abrasive products—processes that have been tried and proved years ago. This means that the tile is always uniform. It never loses its non-slip surface and it is practically non-wearing. Under the slight wearing action of traffic, Carborundum Anti-Slip Tile literally renews its safe surface. The innumerable grains of which the tile is composed offer a resistance against slipping. They are hard, sharp and extremely tough and under the wear of traffic these grains or crystals will fracture before they wear smooth and in fracturing, turn up fresh holding edges. Frankly, the wear is always on shoe leather and not on the tile.

In stair treads, ramps, concourses, building entrances, elevator landings, about the edges of swimming pools, on general factory floors, places about machinery, for the floors in front of switch boards in transformer stations and other places where electrical apparatus is installed, Carborundum Anti-Slip Tile will make impossible the accidents due to slipping and falling. Such accidents have caused not only much human suffering but have been the cause of a great economical waste resulting from compensation, hospital and other incidental expenses.

The truth of this statement is most forcibly emphasized by statistics. For instance in one

year in the United States 7,590 people were killed by slipping, tripping and falling on stairways, floors and streets. The estimated loss including compensations paid, hospital and medical fees resulting from these accidents was placed at \$150,000,000. The total number of accidents from slipping, tripping and falling is greater than those caused by automobiles, street cars and fires combined.

The problem, therefore, of safe-guarding the pedestrian is indeed a serious and important matter to be considered by the architect, the engineer and the building owner.

### **The Distinct Advantages of Using Carborundum Anti-Slip Tile—**

Carborundum Anti-Slip Tile will retain its safe, non-slip surface as long as the tile itself lasts.

It is safe under all conditions. Oil, water or grease do not affect its slip-proof qualities.

Where this tile is used an even, flat surface is presented underfoot. The tile is laid flush with the stair tread or floor. There are no corrugations, ribs or ridges to cause tripping or to annoy by catching accumulations of dirt.

Carborundum Anti-Slip Tile can be used with any building material such as concrete, marble, granite, brick, steel or wood.

The resistance of the tile to wear eliminates any cost of maintenance.

Carborundum Anti-Slip Tile is remarkably strong. Tests have proved that the tile at room temperature shows a transverse strength, as indicated by the modulus of rupture, of 5473 pounds per square inch.

Carborundum Anti-Slip Tile is uniform in its colors, light brown or white. The tile is made in all standard shapes and in reasonable quantities in any special shapes within the range of reasonable manufacturing possibilities.

In the pages following will be found illustrations suggesting some of the places where and the conditions under which Carborundum Anti-Slip Tile can be used. It is hoped that these illustrations will be found of value to the architect and the engineer. Further information can be had by writing The American Abrasive Metals Company, 50 Church St., New York, N. Y., selling representatives for United States and Canada.

Carborundum Anti-Slip Tile is manufactured by The Carborundum Company, Niagara Falls, N. Y.





## Carborundum Anti-Slip Tile For Stair Treads



**I**N making safe the stair treads of factories, office buildings, schools, churches, department stores and similar structures Carborundum Anti-Slip Tile renders a distinct public service.

The ordinary stone steps, even when tooled or roughened, soon wear smooth and uneven. Iron treads though corrugated or ribbed soon become slippery and concrete or similar treads never remain permanently slip-proof under the action of foot traffic.

For stair treads the Carborundum Anti-Slip Tile affords a permanent protection. It will not, can not, wear smooth during its entire life. The tile usually used for this purpose is made with a rounded nose giving a safe secure footing right to the edge of the tread. It is laid flush or flat with the surface of the step. There are no grooves, corrugations or ridges to cause tripping. And they last for years under the heaviest of foot traffic.



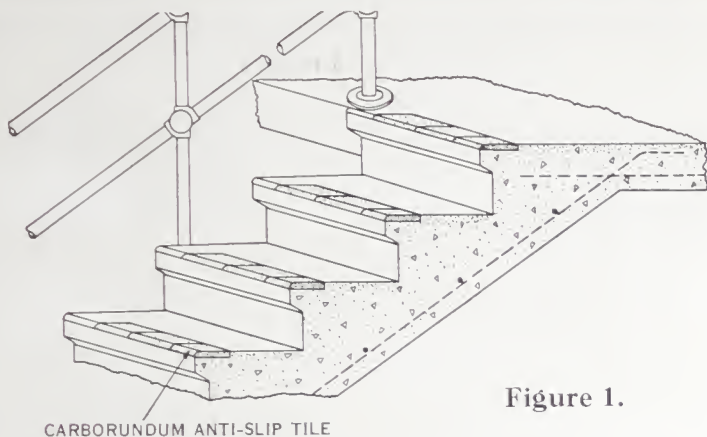


Figure 1.

Carborundum Anti-Slip Tile can be installed in conjunction with concrete being placed in position at the time the treads are poured. See figure 1. It can be laid with the steel stairways having a concrete tread, the tile being set when the treads are poured. See figure No. 2.

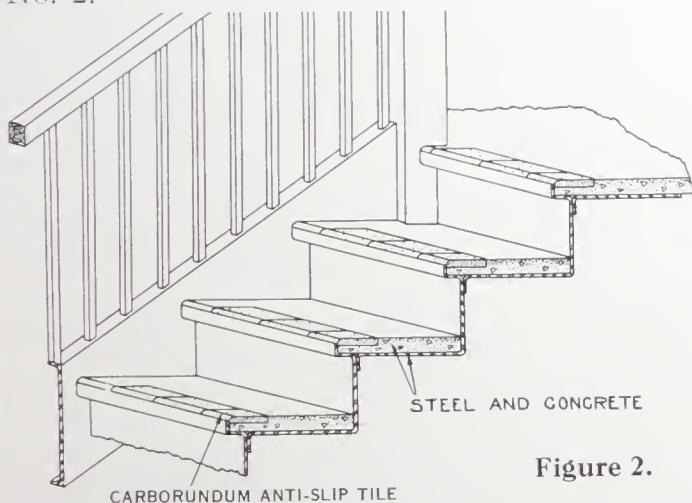


Figure 2.

The tile can also be placed on the wooden steps of new buildings or in retreading old steps. Where used with wood the tile is laid up level or flush with the step surface in a bed of mastic or pitch, and held securely in place

with wood screws, the tile being drilled with holes to take the screws. See figure 3.

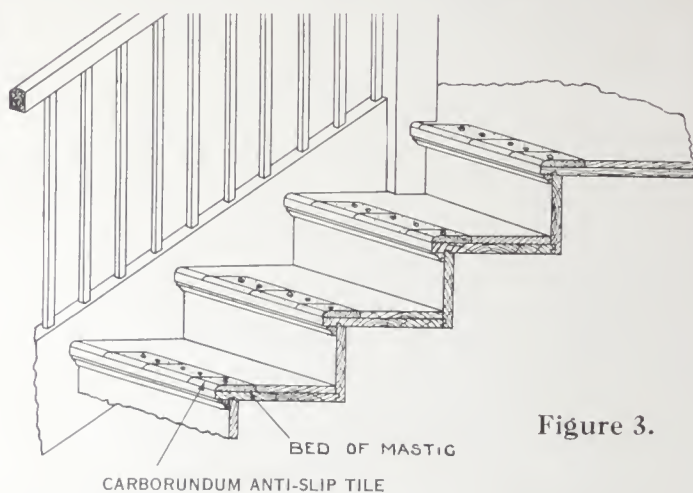


Figure 3.

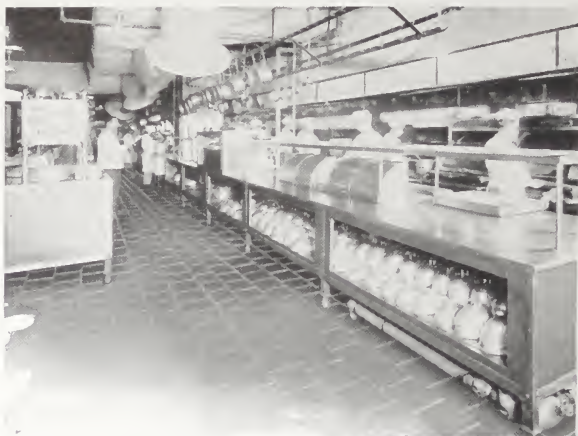
## Carborundum Anti-Slip Tile For Floors

CARBORUNDUM Anti-Slip Tile for the floors of factories and public buildings eliminate the hazard of the treacherous, slippery working and walking surface giving a floor that has the combined advantages of being absolutely slip-proof, remarkably durable and economical.

Carborundum Anti-Slip Tile can be laid over old floor construction or can be installed in connection with old or new concrete base, flat or arched hollow tile construction, over old or new wooden joist construction and over any wooden floor surface. For specifications for laying the tile under the various conditions see pages 16 to 19.

The tile is especially recommended for spaces about machinery. It gives the worker a sense of security, eliminates the hazard of accident due to tripping and falling and does away with the fatigue experienced by all operators who are forced to work on a slippery surface. Oil, grease or water do not effect the anti-slip surface of Carborundum Tile. It has high dielectric strength and may be safely used for flooring around switchboards and electrical machinery. The first installation cost is the only cost because the tile lasts almost indefinitely and always wears evenly, keeping its holding or non-slip surface.

Carborundum Anti-Slip Floor Tile is made in square and oblong shapes in standard sizes.



Carborundum Anti-Slip Tile safe-guard  
the steps of hotel kitchen workers.



Carborundum Anti-Slip  
Tile should be  
used on shop  
floors.



Carborundum Anti-Slip Tile make slip proof the floors and ramps of stations.

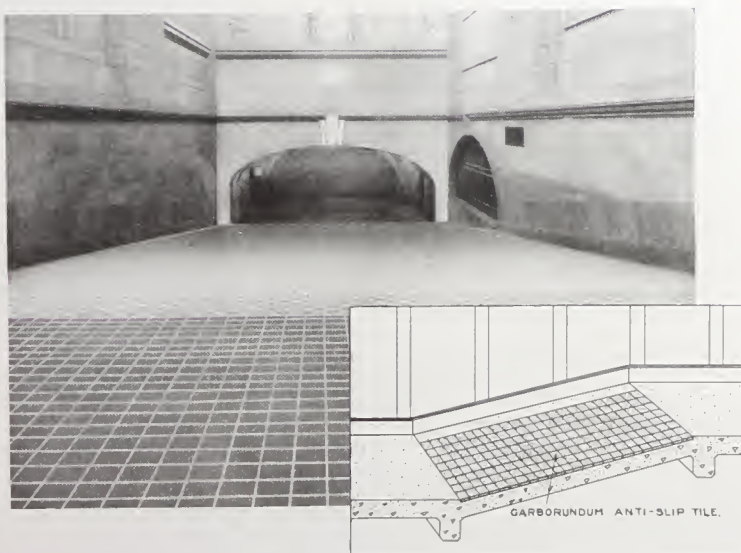


# Carborundum Anti-Slip Tile

## For Ramps

THE ramps of factory buildings, garages and stations are always busy thoroughfares. Because of the great amount of trucking and foot traffic over these inclines it is most essential that they be provided with a secure, slip-proof surface that will stand up indefinitely under the steady day in and day out travel. Carborundum Anti-Slip Tile provides the ideal, safe, wear-resisting surface for ramps, and gives added foot purchase to workmen handling loads.

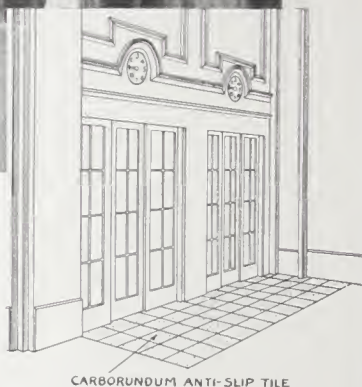
In general practice the tile in sizes  $6 \times 6 \times \frac{3}{4}$  and  $9 \times 9 \times 1$  inches is used. If it is used in conjunction with concrete construction the general specifications given on pages 16 to 19 of this booklet apply. Carborundum Anti-Slip Tile ramps are also used in sub-way construction and have been known to resist years of steady wear.





## Carborundum Anti-Slip Tile

For Elevator Entrances  
And Floors



CARBORUNDUM ANTI-SLIP TILE

**C**ARBORUNDUM Anti-Slip Tile provides a safe, secure, non-wearing surface for elevator landings and floors. In this work tile measuring  $6 \times 6 \times \frac{3}{4}$  or  $9 \times 9 \times 1$  inches is generally used. The tile should be laid up in a bed of a 1:2 cement mixture about  $\frac{3}{4}$  of an inch thick on top of concrete.

These anti-slip floors and landings are most essential in factories. They not only provide a safe surface, but effect a real economy because of their remarkable wear resisting qualities even under heavy loads and traffic. In hospitals, schools, office and general public buildings the Carborundum Anti-Slip Tile elevator floors and landings are also particularly desirable. They are safe. They are durable.

## Carborundum Anti-Slip Tile

### In Entrance Ways

SAFE-guarding the footsteps of pedestrians using store and building entrances is another duty well performed by Carborundum Anti-Slip Tile. It eliminates the menace of the slippery doorway, showing indefinite life and providing an architectural attractiveness. Tile in the 6 x 6 x  $\frac{3}{4}$  and the 9 x 9 x 1 inch sizes are generally used in entrance ways but are also made in  $\frac{3}{4}$  inch square,  $1\frac{1}{8}$  inch square and in the 1 inch hexagonal mosaics. Prices will be quoted on special shapes suited to meet unusual conditions. Not only should the idea of making building entrances safe appeal to architects and engineers, but it should be well considered also by owners of buildings. It is a simple, inexpensive matter to tear out old entrances and install Carborundum Anti-Slip Tile. The tile can be used in connection with concrete or laid over wood.







### Carborundum Anti-Slip Tile For Swimming Pools

**A**NOTHER use for the Carborundum Anti-Slip Tile is along the edges of swimming pools. Plain glazed tile is more or less dangerous but the Anti-Slip Tile presents a safe, secure footing for the swimmers. As shown in the illustration, the tile is laid on top of the cap of the life rail. It is recommended that the tile having a curved nose like a stair tread be used as the rounded edge gives an added secure footing or grip and prevents the swimmer from slipping off the edge when diving. In some instances however just the plain, flat tile is laid up flush with the floor of the plunge room and set just back of the life rail.

Carborundum Anti-Slip Tile gives a safe secure footing always. Water does not affect its slip proof qualities.

It must be remembered that when Carborundum Anti-Slip Tile is used for this purpose it does not have any discomforting or harsh effect



on the feet of the swimmers. The tile even though it gives a secure footing presents a smooth comfortable surface without the annoyance of being rough or irregular. In this respect it acts as might any porous tile but of course has the added advantage of being absolutely safe.

# Specification Guide

For the Placing of

## Carborundum Anti-Slip Tile

### General Specifications.

**BASE OR FOUNDATION.** 1. This requires careful attention and supervision on the part of the Architect or Engineer and the tile layer. It should be level, rigid and free from vibrations.

2. When wood joists and sub floor are used for a base the contact surfaces should be protected from moisture or decay, either by creosoting or covered with tar paper. On top of this shall be placed a 3" layer of concrete, 1: 2½: 5 Mix.

3. If the base is of concrete it should be at least 3" thick, 1: 2½: 5 Mix.

The cement, sand and gravel should be clean and of first quality.

**REINFORCEMENT.** 4. Installations subject to vibrations or other unsteady construction, should be reinforced with a light metal-lath or ½" wire mesh.

**TILE LAYING.** 5. After the concrete, wood or steel base has been prepared use the detailed specifications for laying tile found in following paragraphs to satisfy the conditions of the installation.

**CLEANING TILE.** 6 Due care must be used in laying Carborundum Anti-Slip Tile in order to get a neat, clean looking job.

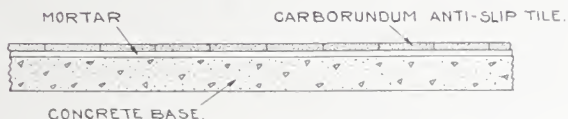
The tile should be allowed to soak in clear, clean water for at least one hour before laying. If the top surface of the tile becomes smudged with cement it should be removed at once by brushing with clean 3" brush and clean water.

If the cement has become hard, use a solution of 1% muriatic acid and a stiff brush, then thoroughly wash with clean water to prevent the tile being discolored by the acid.

## New Construction

### Concrete Base—Flat or Arched Hollow Tile Floor Construction.

**CLEANING BASE.** 7. The top surface should be thoroughly cleaned of all foreign substance and then flushed off with plenty of clean water.

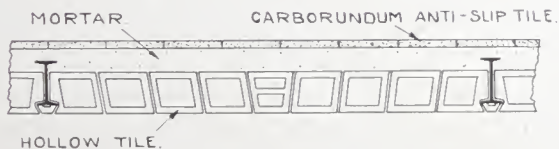


**GROUTING AND BONDING.** 8. The top surface should then be covered with a cement grout over which should be laid a  $\frac{3}{4}$ " to  $1\frac{1}{4}$ " layer of 1:2½ cement mortar and screeded to a level surface.

**TILE LAYING.** 9. After the tile has been soaked in clean water drain and lay it on this level bed of mortar, tamp, level and lay tile true to line similar to the method used in laying vitrified tile.

Joints between tile can vary from  $\frac{1}{16}$ " to  $\frac{1}{4}$ ".

**FILLING JOINTS.** 10. After the bed of mortar has set up, carefully fill in the joints with a thick cement paste or grout using care to prevent the surface of tile from being smudged with the grout.

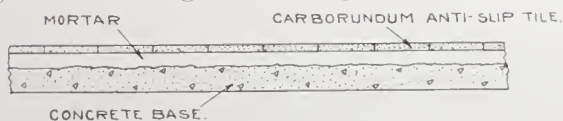


**CLEANING TILE.** Proceed to clean tile as per instructions outlined in paragraph No. 6.

## Old Construction

### For Concrete Base.

**BASE PREPARATION.** 11. Remove the top surface to a depth of not less than 2" below the finished floor level, leaving it fairly level but rough to insure a good bonding surface.

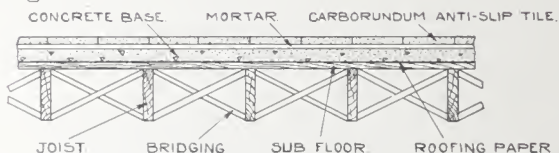


### Specification Guide, Cont'd.

**TILE LAYING.** Proceed to place tile as per instructions outlined in paragraphs Nos. 7, 8, 9, 10 and 6.

#### For Base Consisting of Wood Joists and Floor.

**BASE PREPARATION.** 12. The 1" wood sub-floor is placed between the joists on 2" x 1" cleats in the same manner as used for supporting the concrete base for vitrified tile. Top of the joists chamfered and the joists to be thoroughly bridged.



**TILE LAYING.** Proceed to place tile as per instructions outlined in paragraphs Nos. 2, 7, 8, 9, 10 and 6.

#### Laying Tile in Mastic on Wooden, Steel and Concrete Surfaces.

**PREPARATION.** 13. The surface must be thoroughly cleaned and dry.



**TILE.** 14. See that tile is clean and dry.

**TILE LAYING.** 15. The cleaned surface is then coated with boiling asphalt roofing mastic  $\frac{1}{4}$ " thick for an area of not more than four tile at one time.

The tile is then bedded in this hot mastic, tamping them to a level even surface, keeping the joints true to lines.

**FILLING JOINTS.** 16. The joints can be  $\frac{1}{16}$ " to  $\frac{1}{4}$ " which are afterwards filled with hot mastic, trimmed with a knife and ironed with a hot jointer.



#### For an Insulated Anti-Slip Surface.

Proceed to place tile as per instructions outlined in paragraphs Nos. 13, 14 and 15, excepting bed of mastic to be  $\frac{3}{8}$ " instead of  $\frac{1}{4}$ " thick.



## Specification Guide, Cont'd.

### Anti-Slip Tile for Concrete Stairs.

**STAIR CONSTRUCTION.** 17. Pour the concrete stairs and finish as usual.

18. When the tread is hard enough, just before concrete sets, for the area to be covered by the tile remove the concrete for a depth of  $\frac{5}{8}$ " and then tamp the water soaked tile into the concrete to a level finished position. Joints between tile to be  $\frac{1}{16}$ " to  $\frac{1}{4}$ ".

Proceed with the work on tile as per instructions outlined in paragraphs Nos. 10 and 6.

### Anti-Slip Tile on Old or New Wood Stair Treads.

**PREPARING TREAD.** 19. Recess the wooden tread for a depth of  $\frac{13}{16}$ " and for length and width to suit the number of tile to be used.

**TILE LAYING.** 20. Thoroughly clean this recessed surface and coat with boiling asphalt roofing mastic  $\frac{1}{16}$ " thick. The tile is then bedded in this hot mastic, tamping to a level even surface keeping the joints true to line.

Two methods can be used for mechanically holding the tile in position: Using a 20 ga. brass 1" x  $\frac{1}{4}$ " angle toe guard, the 1" leg fastened to tread by wood screws. The other method is to use tile having counter sunk holes for receiving wood screws and the counter bore is plugged using a vitrified button, this gives the tile a very fine appearance.

The heads of wood screws are covered giving a uniform appearance.

**FILLING JOINTS.** Proceed with the work on the tile as per instructions outlined in paragraph No. 16.

### Anti-Slip Tile on Iron or Steel Stair Treads.

**PREPARING TREAD.** 21. The metal surface should be cleaned and a  $1\frac{1}{2}$ " layer of 1:2½ cement mortar placed on the tread and finished to the proper level. When this bed of mortar is hard enough, just before it sets, for the area to be covered by the tile remove the mortar for a depth of  $\frac{5}{8}$ " and then tamp the water soaked tile into the mortar to a level finished position.

Joints between tile to be  $\frac{1}{16}$ " to  $\frac{1}{4}$ ".

Proceed with the work on the tile as per instructions in paragraphs Nos. 10 and 6.

# **PRICE LIST** **Carborundum Anti-Slip Tile** **STAIR TREADS**

Number	Length	Width	Thick	List Per Sq. Ft.	Unit Price	No. of Tile Per Sq. Ft.	B-Brown W-White Color
T63	6	6	$\frac{3}{4}$	\$1.50	\$ .375	4.	B or W
T943	9	4	$\frac{3}{4}$	1.50	.375	4.	B
T963	9	6	$\frac{3}{4}$	1.50	.375	4.	B
T125	12	12	$1\frac{1}{4}$	3.00	3.00	1.	B

## **FLOOR TILE** **Square**

Number	Length	Width	Thick	List Per Sq. Ft.	Unit Price	No. of Tile Per Sq. Ft.	B-Brown W-White Color
S32	3	3	$\frac{1}{2}$	\$1.35	\$ .084	16.	B or W
S62	6	6	$\frac{1}{2}$	1.35	.338	4.	B
S63	6	6	$\frac{3}{4}$	1.50	.375	4.	B or W
S83	8	8	$\frac{3}{4}$	1.80	.80	2.25	B
S94	9	9	1	2.00	1.125	1.78	B
S124	12	12	1	2.50	2.50	1.	B
S125	12	12	$1\frac{1}{4}$	3.00	3.00	1.	B

## **FLOOR TILE** **Oblong**

Number	Length	Width	Thick	List Per Sq. Ft.	Unit Price	No. of Tile Per Sq. Ft.	B-Brown W-White Color
R3152	3	$1\frac{1}{2}$	$\frac{1}{2}$	\$1.35	\$ .042	.32	B or W
R632	6	3	$\frac{1}{2}$	1.35	.169	8.	B or W
R633	6	3	$\frac{3}{4}$	1.50	.187	8.	B or W
R843	8	4	$\frac{3}{4}$	1.80	.40	4.5	B
R9454	9	$4\frac{1}{2}$	1	2.00	.562	3.56	B
R1264	12	6	1	2.50	1.25	2.	B
R1265	12	6	$1\frac{1}{4}$	3.00	1.50	2.	B

## **FLOOR TILE** **Diagonal Halves**

Number	Length	Width	Thick	List Per Sq. Ft.	Unit Price	No. of Tile Per Sq. Ft.	B - Brown W - White Color
D32	3	3	$\frac{1}{2}$	\$1.35	\$ .042	.32	B or W
D62	6	6	$\frac{1}{2}$	1.35	.169	8.	B or W
D63	6	6	$\frac{3}{4}$	1.50	.188	8.	B or W
D83	8	8	$\frac{3}{4}$	1.80	.40	4.5	B
D94	9	9	1	2.00	.56	3.56	B
D124	12	12	1	2.50	1.25	2.	B
D125	12	12	$1\frac{1}{4}$	3.00	1.50	2.	B

## **CARBORUNDUM MOSAIC** **FLOOR TILE**

SIZE	Price per Sq. Ft.	COLOR
$\frac{3}{4}$ inch Square	\$1.00	Brown or white
$1\frac{1}{4}$ inch Square	1.00	" " "
1 inch Hexagonal	1.00	" " "

Square halves and diagonal halves furnished at same price as above.  
Carborundum Anti-Slip Tile is also made in Special shapes within the range of manufacturing possibilities and depending upon the quantities ordered.

## Carborundum Grains For Cement Sidewalks And Floors



CEMENT sidewalks and floors can be made safe and sure underfoot and years of wear can be added to their surface by the introduction of Carborundum

Grain. Because of the extreme hardness and sharpness of the Carborundum, an abrading or holding effect is produced on the otherwise smooth, slippery cement walk or floor without detracting from its appearance in any way.

Carborundum grain mixtures of grit sizes ranging from No. 12 to No. 30 are generally recommended for this work but mixtures containing grains as coarse as No. 6 can be had if desired. The floors of subway cars, of big metropolitan railway terminals, concourses and stations, and the floors, ramps, vault lights and sidewalks of public buildings that have been treated with Carborundum grain have for years resisted the heaviest of foot traffic without noticeable wear and have safeguarded the foot steps of millions.

The method of employing Carborundum grain is simple. After the first or foundation layer of concrete has been spread, a finish layer of about 1-inch in thickness is laid. The composition recommended for this is

1 part cement

2 parts clean sand (4 to 100 mesh)

After striking off to grade, the Carborundum grains are sprinkled on the surface and worked into the surface with a wood float, care being taken not to work in the grains too deeply. After allowing to set for about 15 minutes until water has disappeared the surface is finished



with a steel trowel. The surface may be finished smoother than is the usual practice for sidewalks, since the hard and sharp Carborundum grains will provide sufficient non-slip properties.

For ordinary sidewalks or floors, the most satisfactory results are attained with  $\frac{1}{4}$  pound of Carborundum grains to the square foot. The special No. 12 to 30 Carborundum grains are recommended.

It is important to spread the grains evenly over the surface. This can not be easily accomplished by the use of ordinary wire screen riddles, but the following simple device gives excellent results. A smooth circular piece of heavy wrapping paper is cut to fit and placed in a 4 mesh or  $\frac{1}{4}$ -inch hand riddle. By means of an ordinary sharpened pencil or a tapered, pointed tool,  $\frac{1}{4}$ -inch holes about 1 to  $1\frac{1}{2}$  inches apart are punched over the entire surface. The Carborundum sidewalk grain is then shaken through this improvised screen and the grain uniformly distributed over the desired surface.

A highly resistant wearing surface, as well as one which is non-slip, may be produced by using higher amounts of Carborundum. For this purpose a "putty coat" composed of 1 part Carborundum grains mixed with 2 parts cement should be used for a finishing layer from  $\frac{1}{2}$ -inch to  $\frac{3}{4}$ -inch thick.









